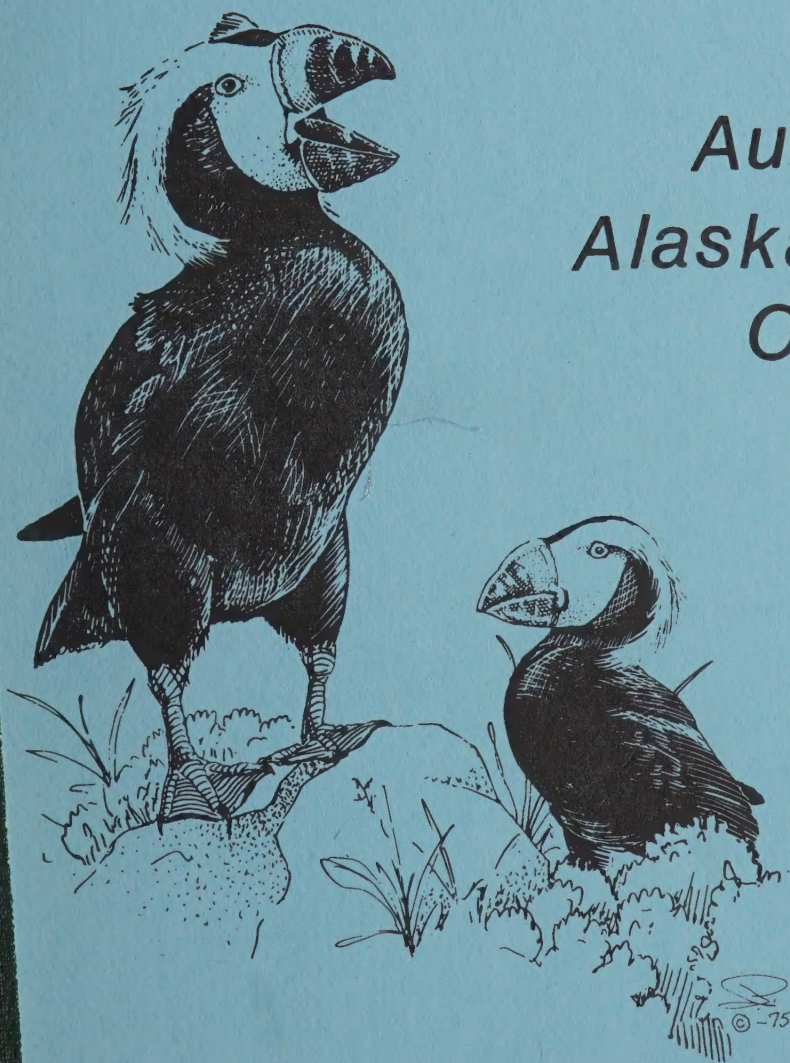


*A
Guide
to
the
Audubon
Alaskan Birds
Chart*



SEPT.
1976

POLAR
PAM
3253

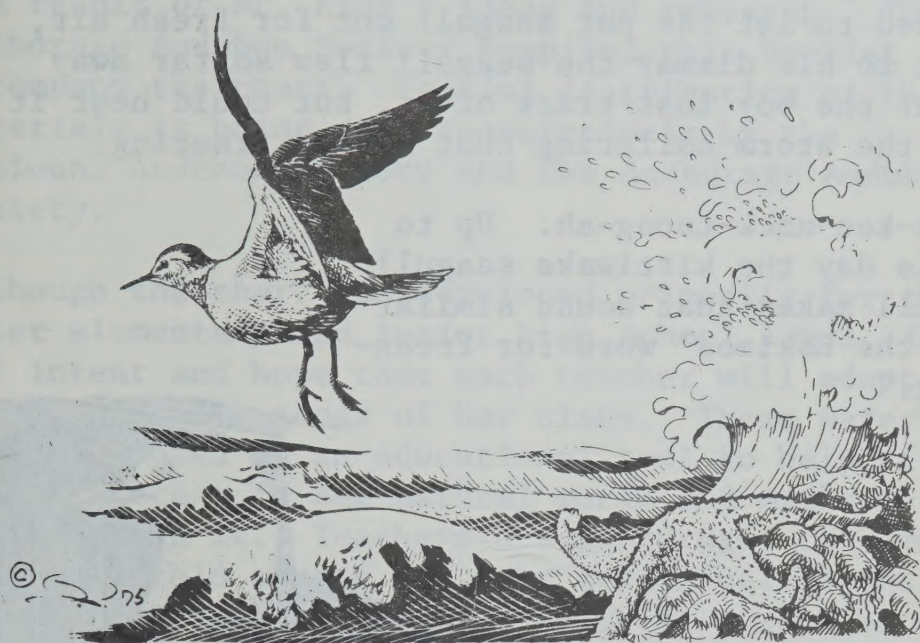
POLARPAM

A GUIDE TO THE AUDUBON ALASKAN BIRDS CHART



Rec'd: April 13, 1978
Order No.: 9420A
Price: \$3.95 (set)
Acc. No.: Alaskan Audubon Society

A GUIDE TO THE AUDUBON ALASKAN BIRDS CHART



Illustrated by: John Pitcher

Booklet compiled by:

ANCHORAGE AUDUBON SOCIETY, INC.

P.O. Box 1161

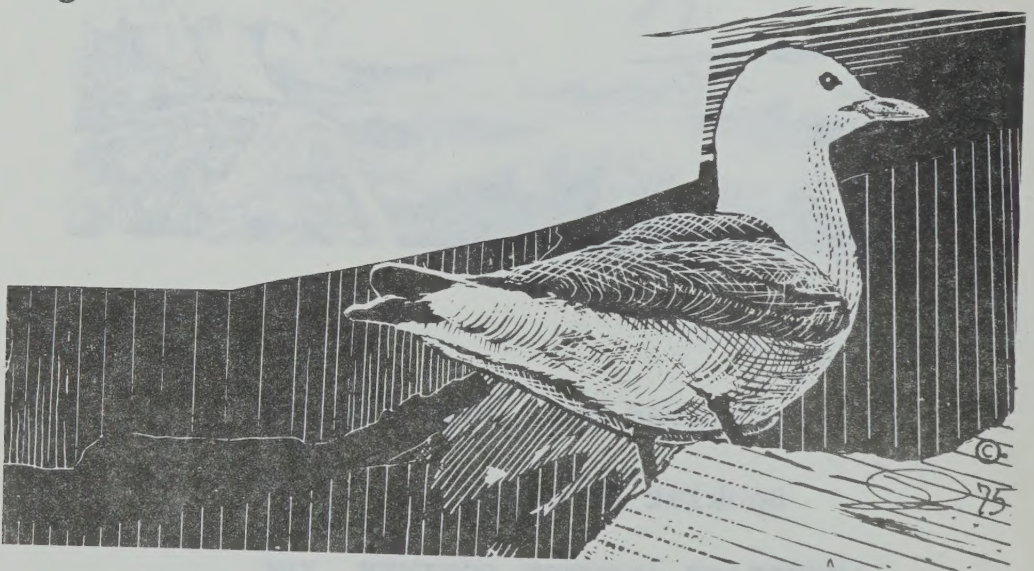
Anchorage, Alaska 99510

THE LEGEND OF THE "KITTIWAKE SEAGULL"

"A very long time ago there lived a couple with a child. One spring the couple took a baby kittiwake seagull to their home for a pet for their child. They kept it all summer, fall, and into a good part of the winter.

One day during the winter months, the child decided to let the pet seagull out for fresh air, but to his dismay the seagull flew so far away that the boy lost track of it, but could hear it in the storm hollering that it was freezing.

Kee-kee-nack-toong-ah. Up to this day the kittiwake seagull still makes that sound similar to the Eskimos' word for freezing."



Tales of Eskimo Alaska. Alaska Methodist University Press; Copyright, Alaska Methodist University, 1971. Anchorage, Alaska.

STATEMENT OF PURPOSE

Many years ago Mr. James King, now of Juneau, Alaska, began developing a bird study program for use in Alaskan schools. Mr. King had observed the keen interest students had in birds and he wanted to encourage and develop this interest. The Alaskan Birds Chart, printed by the National Audubon Society, is the result of Mr. King's ideas and research. The Anchorage Audubon Society compiled this booklet to accompany the chart. Initial distribution of these materials is being done cooperatively by the National Audubon Society and the Anchorage Audubon Society.

Although the chart was developed primarily for the upper elementary and junior high school level, it is our intent and hope that each teacher will adapt it to the specific needs of her class. These materials are to be used as an educational tool to help stimulate interest in our natural world and man's involvement in it. Teachers are encouraged to remove the centerfold charts and make individual copies of them for their students. Activity work sheets or game sheets can be easily compiled from the many varied student activities throughout this guide. Because our main purpose is to present a perspective of birds across Alaska, we included only a few art projects knowing that the classroom teacher can better meet the artistic needs of the students.

This booklet is to be used primarily as a supplement to the Audubon Bird Study Program. It is not meant to replace that program but merely to provide specific references, examples, and information about birds in Alaska. For more detailed information about the Bird Study Program and other educational aids, write to: Educational Services Department, National Audubon Society, 950 Third Avenue, New York, N.Y. 10022.

ACKNOWLEDGEMENTS



I would like to express my appreciation to the many people and organizations who contributed ideas and materials for this booklet:

Alaska Department of Fish and Game: Ray Kramer for endangered birds' article.

Anchorage School District Career Center students:

Gary Keen for his article

on duck stamps; Joel Schilmoeller for his article on bird banding.

Anchorage School District Teachers: Dennis Bromley, Sally Brook, David DeLap, Jane Middleton, Ginny Stevens, Anne Wieland, and Merrilee Zenone.

National Audubon Society: Duryea Morton, Director of Educational Services, for printing of the chart; Paul Howard, Western Regional Representative, for printing the booklet. Gwen Ross, typing and editing.

U.S. Fish and Wildlife Service personnel: Edgar P. Bailey, Dave Cline, Jim King, Elaine Rhode, and Craig Rieben. Also thanks to the U.S. Fish and Wildlife Service for permission to use the photograph and information on the banding of birds.

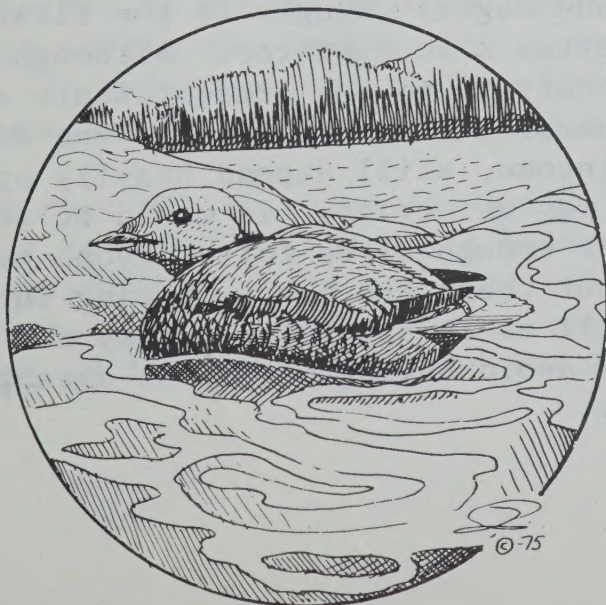
Other friends who were of great help were: Cynthia S. Quinn, librarian; Sharon E. Pitcher and Elaine Pratt, typists; John Pitcher, artists; and Marilyn Warren, cartographer.

For all of you who responded with enthusiasm and cooperation, I do thank you and appreciate your support.

Janet Klein, President
Anchorage Audubon Society

TABLE OF CONTENTS

Introduction for the Teacher.....	1
Introduction for the Student.....	3
Historical Background of Birds in Alaska.....	6
Migration.....	12
Inserts.....	Center
Alaskan Habitats.....	17
Endangered Birds of Alaska.....	22
Bird Banding.....	25
Duck Stamps.....	28
List of Illustrations.....	30
Student Activities.....	31
Glossary.....	39
Bibliography.....	41



INTRODUCTION FOR THE TEACHER

You will find that the average child in Alaska is very much aware of the birds in his area. Past experience has shown that a bird study program is received with much enthusiasm and opens the door to an interest in geography and other subjects. This guide should prove of particular help to the teacher located in the smaller village. Frequently an interest in birds is one of the few common bonds between the teacher in the small remote village and the people who live there. However, this program is intended to be equally informative and stimulating for children in urban Alaska.

We hope through this course to create a broader perspective on the part of children with regard to birds. A broader perspective would help to dispel such common notions as: people have no need to feel a sense of responsibility for the well-being of birds; birds are valuable only as food for people; there is an unlimited supply of birds and always will be; all people in the south kill birds indiscriminately for fun; and birds nest again in the south during winter.

In some areas of Alaska, birds are still hunted in the spring and eagerly sought as the first source of fresh meat after a long winter. Although this hunting is contrary to our present State and Federal laws, many people, especially those who do not have a monetary income, still depend heavily upon spring hunting and egg gathering. It would be wonderful if there were enough birds for everyone to have all they want, but there are not. Sharing in conservation as well as in use is necessary for everyone if we are to avoid having our birds disappear like the buffalo.

For millennia the very existence of the Natives of Alaska has centered around hunting. Although progress has caused many Natives to turn to a monetary barter system, subsistence hunting is still practiced. Often it is the only means of obtaining food for many people. This, of course, presents many perplexing problems which must be addressed. As educators we must be aware of this unique situation and must strongly encourage the Natives to develop workable solutions themselves. We must also encourage all people to cooperate fully with the government agencies that monitor and manage the wildlife resources of Alaska. For the teacher, environmental education can be an excellent tool during these difficult times. Children must learn that whenever spring hunting or egg gathering occurs, the population of birds is directly affected. Buffeted as they are by subsistence hunting, fall hunting in other parts of the United States, disease, natural mortality, habitat destruction and pesticide problems, bird populations are going to have to be carefully monitored and protected by all people. Only then can we be relatively certain that birds will be with us for many millennia more. It is encouraging to read the following statement from the book, Does One Way of Life Have to Die So Another Can Live?, "There is no group which has a greater interest in protecting fish and game resources than village people who depend upon them for subsistence." If this is correct, then the future looks encouraging for the birds of Alaska.

It is hoped that the teachers using this course will be able to instill in their students the basic conservation concepts and interest in birds that will make all children realize that each and every one of us is responsible for our Alaskan resources.

INTRODUCTION FOR THE STUDENT



It is particularly important for Alaskans to know about birds because Alaska is the summer home of millions of birds that raise their young here and then go south to other states and countries. In order to understand our birds, we must know how they make their living; how they raise their families; where they live; and how they get from their summer nesting grounds to their winter feeding areas in the warm south.

It is important for us to know how birds affect the lives of people. Birds help to control insects, clean up areas by feeding on the carcasses of dead animals and other food scraps, provide food to other creatures and

to people, and provide pleasurable opportunities to people who like to watch and listen to them. Sometimes birds are a nuisance particularly when they rob bait from traps, dirty up buildings, interfere with airplanes, or damage peoples' gardens and crops.

It is also important to know how people affect the lives of birds. Not only have we become numerous, but we have done much to change the places where birds live by cutting down forests; draining ponds; plowing up prairies; building roads; building dams that

flood wildlife habitats, and crowding industries and cities close together for mile upon mile.

In many parts of the country, we can no longer expect birds to take care of themselves. Fortunately conservation agencies, organizations, and interested people have been making a tremendous effort to see that there are places for birds in every part of America. Marshes and woodlands have been acquired for sanctuaries where birds can rest and feed; crops have been planted for birds. nesting boxes, islands, and other devices have been provided for bird families; hunting restrictions have been enforced; some polluted waters have been cleaned and wasteful practices such as killing birds for feathers or to sell in meat markets have been outlawed. If people in the south were not doing these things, we would soon notice a decrease in the number of birds returning to Alaska in the spring.

As people continue to increase in numbers, everyone is going to have to help if we are to maintain good bird populations. We are fortunate in Alaska in that we do not need to plant food or build ponds for birds. However, there are many important things each of us can do. Very little is known about bird migration in Alaska. Scientists who are developing methods for helping birds survive need to know what routes birds take when migrating. You can help by completing a waterfowl migration chart included in the chapter on migration.



As this information is received from schools in Alaska, scientists will be able to see how and when the birds move through our state to their nesting grounds.

There is something else each of us can do to help in learning more about bird travel. Government scientists have put metal leg bands on many birds from all parts of the country. If you find a bird band, give it to your teacher. Tell your teacher what kind of bird the band was on, where you found the bird, and on what date you found it. Your teacher will help you write down this information and will send it to the proper government agency.

Learning to identify birds by sight and sound can be fascinating fun. Work with your teacher, family and friends to see how many birds you can learn to identify. For help in learning more about birds, use special bird books called field guides. These guides describe, in words and pictures, what a bird looks like, where it lives, and many other exciting facts. Field guides and other bird books will be a great help to you as you discover the joys of birding.



HISTORICAL BACKGROUND OF BIRDS IN ALASKA

Most of the information on the Alaskan Birds Chart was taken from the out-of-print book, Birds of Alaska by Ira Gabrielson and Frederick Lincoln. This book, although hard to find, contains a wealth of information about birds and is an excellent educational tool. For many of the birds, the book lists a



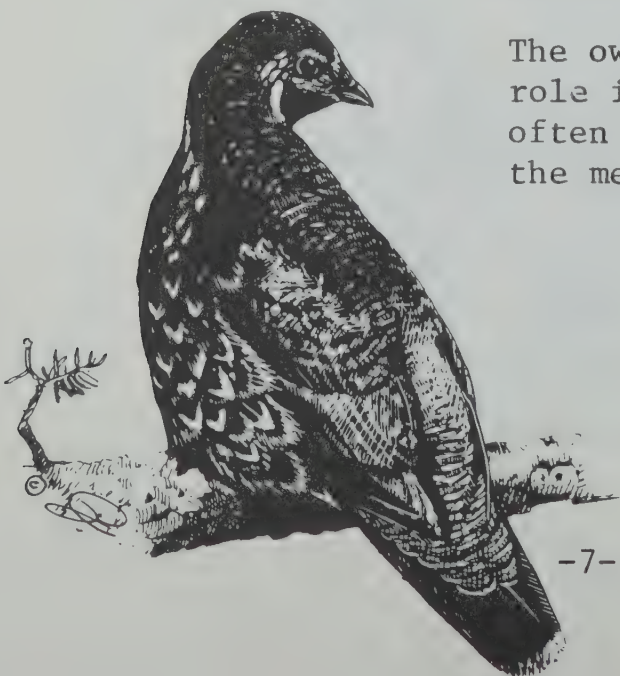
Native name and often the translation; an example is that of the dipper (#25 on the chart). The Nunamiut dialect at Anaktuvuk calls the dipper Anaruk Kiviruk, which means "old woman sunk." Once you have learned the habits of the dipper, it is readily apparent why this colorful name is especially appropriate.

Student Activity: Encourage students to talk with the village elders and learn the local names and translations of the birds in their area. Carefully record this information including the name, age, tribe, etc., of the person telling you about the birds. Later, your class can compile a booklet from the information and activities you have done.

For centuries birds have played a fascinating, integral role in the economic and cultural history of the Natives of Alaska. Because birds are some of the first animals to return in spring, they became an important dietary staple, especially for coastal tribes. Enormous flocks of waterfowl provided early spring meat. The colonial nesting birds, such as the kittiwakes (#17), murrees (#19), and puffins (#20), furnished an

abundant, though often difficult to obtain, supply of eggs. The ptarmigan (#12), being a permanent resident throughout much of Alaska, was a valuable food supplement for many people, especially those of interior Alaska.

But birds were not utilized only as a food source. Often bird skins were used as insoles of boots or for various articles of clothing. Feathers often decorated hunting tools and other items. Many birds, notably the raven (#24) and the eagle (#11), played an important part in the legendary history of the Natives. In southeastern Alaska the raven and the eagle were two of the main crests, or symbols, of the powerful clans of the coastal tribes, especially the Tlingits. As symbols of these clans, the birds were carved on totem poles, ceremonial dishes, boxes, and other objects. An entire mythology developed around the raven, not only in southeastern Alaska, but generally over most of the state. Raven created man, brought daylight into the world, and yet was regarded as a real mischief maker. Totem poles, a unique art form indigenous to the Pacific Northwest coastal peoples, are a graphic example of the importance of birds in the culture of the southeastern Indians. Nowhere else in the world can totem poles be found as a Native art.



The owl also played a major role in mythology. It was often in the main crest of the medicine man or shaman.

Student Activity:

Encourage students to find any legends or stories of birds that played a significant role

in the development of their cultural history. Carefully record these legends in a booklet, illustrate them, then give the booklet to your school library (or principal) so it may be kept permanently.

Student Activity: Have each student choose a bird that can be easily observed. Watch the bird as it hunts for food, builds a nest, defends its territory. Have the student design, or carve, a totem pole depicting the bird in a simplified form. Emphasize an outstanding characteristic of the bird; for example, the crest of the Steller's jay (#22) is a prominent feature of that bird. Use the crest as the top of the totem pole. Once the pole is finished, have the student write an imaginary legend about the bird and its exploits or have the student write a descriptive article explaining the designing, carving, and painting of a pole.

The early white explorers and pioneers of Alaska also depended upon the resources of the land. Without a local source of food, including birds, they could not have survived.

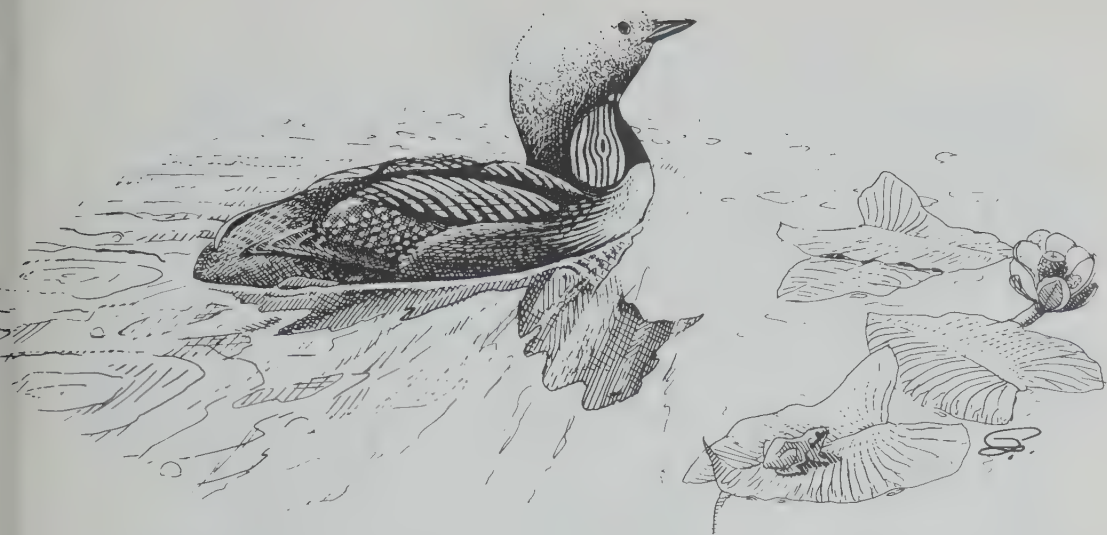
Even today grouse, ptarmigan, geese, and ducks grace the tables of many Alaskans across the state. With the same number of birds, or perhaps fewer, and with many, many more people now in Alaska, care must be taken in how our bird resources are used. Each of us can play an important role in the wise use and preservation of all animal and plant resources.

Following is a legend from the past. It is told

about Mr. Raven in his role as a trickster. The legend comes from the Nunamiut Eskimos of interior Alaska:

One time in the very early days, Pacific Loon was Mr. Raven's partner. In those days, both Mr. Raven and Loon were white; they had no coloring of any kind on their parkas. The two partners hunted during the day and spent many evenings talking, joking, and making a lot of fun together. One day while Mr. Raven was out hunting, he saw a fireplace where some person had camped on the shore of a lake. Mr. Raven returned to his camp and said to Loon, "Partner, I have found something for you and me. Our coloring is light and in the summer any animal or enemy can see us easily from a long distance. We ought to do something to our parkas." His partner, the Loon, was happy to hear Mr. Raven. He often had difficulty in chasing fish; because he was so white he frightened them away. Loon believed that Mr. Raven was right about wanting to add color to their parkas. "How?" asked Loon. "We can use charcoal," replied Mr. Raven, "and we can make all kinds of fancy trimming for our parkas." Mr. Raven told Loon where the fireplace was, but Loon complained that he could not walk very far on land. His leg was crippled and he traveled only by kayak. Mr. Raven gave Loon complete directions how to find the fireplace and flew up into the air. "Watch where I land," cried Mr. Raven, "it is not far." Loon got into his kayak and paddled slowly toward the fireplace. He was very happy. He smiled to himself and thought, "I will paint Mr. Raven all black because he wants to fool me, his partner."

As Loon approached the fireplace, Mr. Raven was sitting there waiting for him. Mr. Raven picked up a piece of charcoal and tested it on his parka. It made a dark color all right. Mr. Raven called



out to Loon, "Come over here, there is plenty of charcoal." When Loon's kayak touched the shore he climbed out and walked slowly up to the fireplace. Then Mr. Raven told Loon, "Let me color your parka first, but you will have to shut your eyes until I finish. Then after I finish coloring your parka, you may color mine." Loon closed his eyes, and Mr. Raven proceeded to color his parka. He worked slowly, marking Loon's parka very carefully with the charcoal. He put some very fancy trimming on Loon's parka. "My gosh, partner," said Mr. Raven, "You are going to have a beautiful parka. Someone will like it very much." Finally he finished coloring the parka. "All right, open your eyes," he said. Loon opened his eyes and looked around very slowly. "My gosh!" he said, "My parka is very nice. Thank you, partner." Then Loon told Mr. Raven, "Now, you must not open your eyes until I am finished." Mr. Raven was so happy, he really wanted to have a nice parka. Loon marked Mr. Raven's parka very slowly, very carefully with the charcoal. Finally Loon said, "All right, partner, take a look at your new parka." Mr. Raven turned around and said, "That is very nice, the trimming is very pretty, but I think you better darken the whole thing a little more."

"I will," said Loon, "Shut your eyes and this time I'll finish it." Loon began marking Mr. Raven's parka very carefully with the charcoal. Mr. Raven thought to himself, "Loon is doing all right. It's good to have a nice-looking parka for hunting so the animals and even enemies cannot see me." For a long time Loon colored Mr. Raven's parka. "My gosh! Your parka is beautiful. I have only a little more to do...all right, now, open your eyes." But Loon's heart was very warm because he knew he had colored the parka entirely black; he knew Mr. Raven would not like it. Mr. Raven opened his eyes and turned around, but he could see no fancy trimming; he became angry, "You are a fool, I know I should not be that black." But Loon, he just laughed. Suddenly Mr. Raven grabbed a handful of ashes and threw them at Loon, but Loon dived quickly into the water. Just before Loon entered the water, the ashes hit him on the back of his neck. Mr. Raven tried to throw more ashes; Loon kept on laughing and laughing and diving every time Mr. Raven tried to throw ashes at him. Mr. Raven ran along the lake shore, but he could not swim; he tried to call Loon back, but it was hopeless.

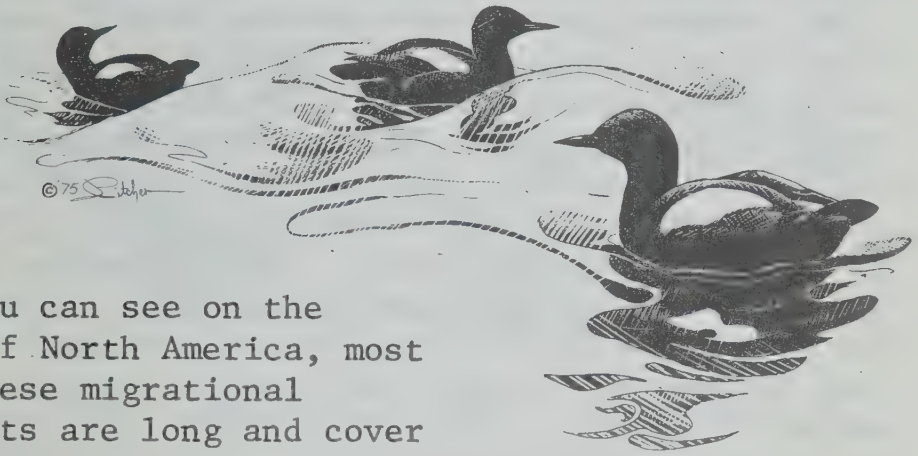
That is why the Loon has a funny-looking coloring on his neck, like ashes. The Loon is laughing to this day about how he fooled Mr. Raven. They quit visiting together and were no longer partners. They had become enemies.

The above legend is taken from the book The Nunamiut Eskimos: Hunters of Caribou, Nicholas J. Gubser, Yale University Press: New Haven and London 1965; Copyright 1965 by Yale University.



MIGRATION

Migration is the regular movement of birds from one place to another. Most birds migrate twice a year. In the early spring they fly northward to their breeding and nesting grounds. Here eggs are laid and the young are hatched and raised. Then in late summer or early fall the adult and the young birds migrate south again to spend the winter feeding and resting.



As you can see on the map of North America, most of these migrational flights are long and cover hundreds, often thousands of miles.

(Some Alaska birds, such as the dipper (#25), the raven (#24), and the willow ptarmigan (#12) stay in Alaska but migrate altitudinally; that is, they fly from higher areas to lower sites where the winter is less severe and food is more available.)

The chart shows the four major flyways in North America; the Pacific, Central, Mississippi, and the Atlantic. These flyways are invisible roads in the sky along which birds travel. If you look at a relief map of North America, you can see that these flyways follow certain geographical features. For example, the Central Flyway parallels the Rocky Mountain Chain that stretches from Mexico northward through the United States, through Canada, and on into Alaska. This mountain range forms a natural barrier and migrating birds travel alongside it.

Although many birds wintering in southern parts of the United States or further south will stop in the northern United States or in Canada, many more fly all the way to Alaska to nest.

Upon reaching Alaska, the birds disperse to their nesting areas. Some of the song birds, such as the thrushes, move into the dense forests where they will nest while others, such as the Lapland longspur (#27) spread across the tundra. Great flocks of waterfowl often concentrate in major nesting areas such as the Yukon Flats. Some waterfowl, like the pintail (#7), can be found scattered across Alaska while others like the emperor goose (#5) are more localized in their nesting areas. Many of the trumpeter swans (#2) will nest on the Copper River Delta near Cordova. The many species of seabirds, such as murre (#19), and kittiwakes (#17) fly to the coastal islands along the Bering Sea and the north Pacific Ocean. Here they concentrate in huge colonies during the nesting season.

Why does Alaska attract over 300 species of birds? As the chart indicates, our state is a huge state, full of wide-open, undeveloped land where birds can still find the privacy and room they need. All living things require food, shelter, and water for their existence and Alaska has an unusual abundance of these. With its spaciousness; thousands of ponds, lakes, and rivers; dense forests; vast uncrowded tundra; rugged mountain ranges, and thousands of miles of seashore and inaccessible islands, Alaska is a natural haven for birds. Also, in some



parts of Alaska, the long daylight hours in summer permit rapid growth of plants and insects on which the birds feed.

We are often not aware that migrations are occurring because birds are often very secretive about their flights. Many of the smaller birds migrate at night when they are safer from their enemies. During the day these tiny migrants rest and feed. Waterfowl, especially geese and ducks, migrate both day and night. We can see and often hear flocks of waterfowl passing overhead.



As the chart shows, most birds spend their winter outside of Alaska. But how do we know where they go once they leave our state? Bird banding helps answer that question. Many birds return to the contiguous United States, but others, like the wheatear (#26), fly to distant continents such as Africa. Some of Alaska's shorebirds, such as the American golden plover (#14), winter in Hawaii. Others may migrate southward along the Asiatic Route to Japan and the Orient.

Student Activity: Keep a list of the birds your class sees in the winter (permanent residents). Keep another list of the birds seen in the spring, summer, and fall (migrants). Compare the lists. Determine what food, shelter, and types of water the permanent residents need in comparison to the habitat requirements of the migratory birds.

Alaska also receives birds from many other continents. Some of these birds from Asia, Europe, and Africa are actually summer migrants to our state. However, every year many rare or unusual birds are seen in Alaska. These unexpected birds that are extremely far from their summer nesting grounds are called accidentals.

Why do stray, unexpected birds appear? One suggestion is that widespread storms cause the birds to become disoriented. What other reasons can your class offer?

Migration is a major spring and fall event in Alaska. Here all of us have the opportunity to observe the comings and goings of the many species of birds that contribute so much beauty, interest, and excitement to our lives.

Student Activity: Look carefully at a map of North America which shows land formations such as mountains, deserts, and oceans. Then, on your Alaskan Birds Chart, look at the four major flyways. What are some of the natural hazards; e.g., snowstorms, migrating birds encounter? What are some of the man-made hazards; e.g., a drained lake, birds encounter? After listing these hazards, explain the term, "survival of the fittest."



Student Activity: Make an Alaska Waterfowl Migration chart for your classroom. Use the format suggested below. As waterfowl return in the spring, carefully record the species and date it was first seen singularly and also in a flock of ten or more. Because some of the birds listed below may not be found in your part of Alaska, leave those lines blank. When migration is over, fill out one master form and send it to the U.S. Fish and Wildlife Service, Juneau, Alaska 99802. If you see waterfowl that are not listed below, add their names. Your careful observations and recording of the data will be most appreciated and will help scientists learn more about migration in our state.

ALASKA WATERFOWL MIGRATION RECORD
Spring 19__

School_____

Class_____

Teacher_____

Town_____

English name of bird	Native name and meaning	Date first bird seen	Date first flock seen
-------------------------	----------------------------	-------------------------	--------------------------

On the left side of the page, going down in a column, write the following names:

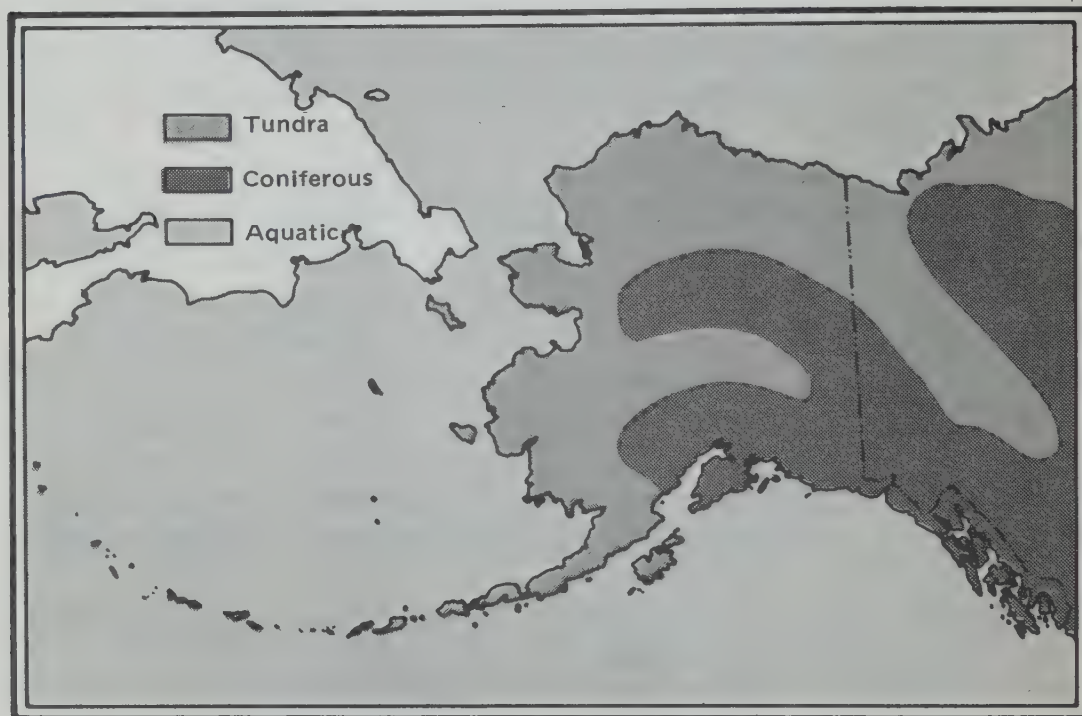
swan
Canada goose
emperor goose
white-fronted
goose
snow goose
mallard
pintail
green-winged teal

wigeon
canvasback
shoveler
scaup
goldeneye
bufflehead
oldsquaw
harlequin

OTHER BIRDS:
Steller's eider
common eider
king eider
spectacled eider

ALASKAN HABITATS

We have defined "habitat" as the place where a plant or animal can find the right food, shelter, water, temperature and other things it needs to live. There are many types of habitat throughout the world as can be seen along the bottom of the chart. However, in Alaska, there are three major habitat divisions: tundra (#30), coniferous or northern forest (#29) and aquatic. Each of these major divisions has many more specialized types of habitat within them.



Major Habitats of Alaska

The tundra is an area of relatively low-growing ground vegetation, cool temperatures, often constant winds and moisture-retaining soils that support a variety of delicate flowers, mosses and lichens. There are three distinct types of tundra.

in Alaska: wet, moist, and alpine.

The boreal or northern forests are composed primarily of spruce, hemlock, and a few varieties of deciduous trees such as birch, aspen, cottonwood, and poplar. Muskeg is the wet, moss-covered clearing found throughout forests. Shrublands, or open brush-covered areas, are generally transition zones between the forest and tundra regions. Streams and lakes are also a vital part of the forest habitat.

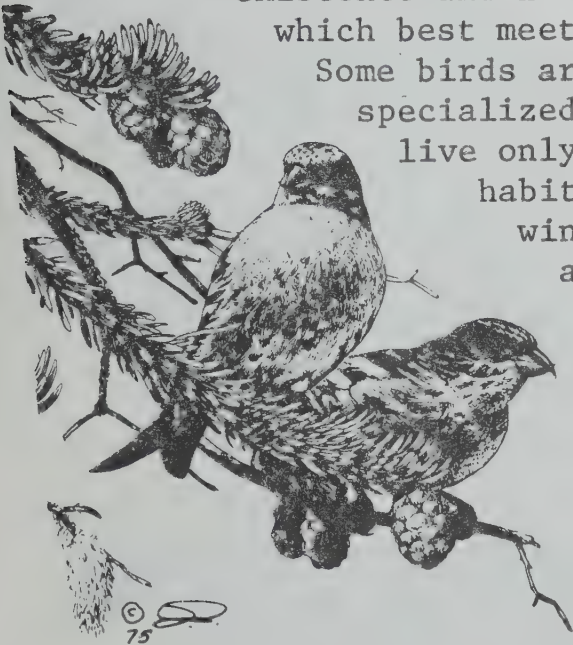
The aquatic habitats of Alaska consist primarily of freshwater streams, rivers, and lakes, and also of the coastal marshes and oceans bordering our state.

Every bird has its own special needs for existence and lives in the situation which best meets those needs.

Some birds are so highly specialized that they can live only in a particular habitat. The white-winged crossbill is

a good example of specialization.

With its twisted bill the bird extracts seeds from hemlock, spruce, and pine cones. Thus it must live in coniferous forests.



Because of seasonal changes some species of birds migrate to different parts of the world. The photographs along the bottom of the chart show just

a few of the different habitats to which our Alaskan birds migrate to spend the winter.

Student Activity: Walk around your town. List the different types of habitat in your area; for example, seashore, birch forest, alpine tundra. Choose one of those habitats and visit just it. Record the birds, plants, and animals there. Keep a chart for spring and soon you will have a complete listing of the flora and fauna surrounding your town. Notice that you may see some birds, etc., in only one area. Others, like the gull or raven, may be seen in many areas. Keep your class chart. Year after year you can compare the habitats and the varieties of plants and animals seen. Also, if you record the number of individual birds, etc., observed, you will be able to see how populations often change.

Student Activity: Pen pals--Choose a bird that summers in Alaska but migrates elsewhere for the winter. On a detailed map of the United States find a town which is in the area where "your" bird might migrate. Write to the local school district and have them give your letter to a student who would be interested in exchanging information and sharing news of "your" bird. Try to learn what type of habitat and kinds of food "your" bird needs at that time of year.

Picture 31 on the chart shows a winter refuge scene. A refuge is an area that has been set aside to provide safety, shelter, and food for wildlife. All across the United States refuges have been established for the protection

and management of migratory birds.

Each year over 1 million geese, 12 million ducks, 70,000 swans, and 150,000

cranes migrate to Alaska. Many of these birds can be found nesting on the refuges across the state. Also included in the refuge system are areas for endangered

wildlife species and for the preservation of unique habitats. If

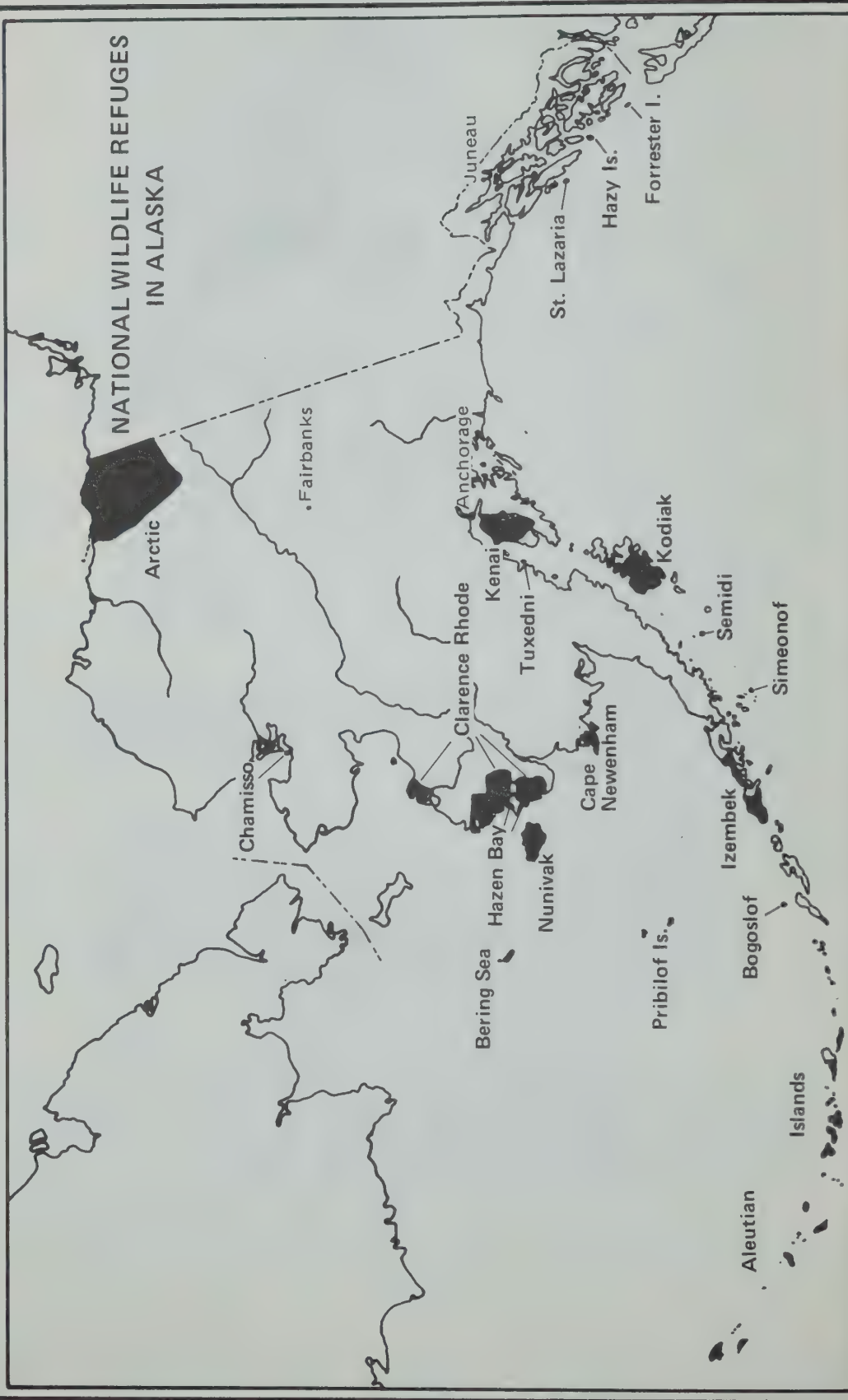
you are fortunate enough to live near a refuge, it is an excellent place to become acquainted with local birdlife.



Student Activity: If you live near a refuge, contact the refuge manager and arrange a class field trip. When possible, the manager or another refuge employee may be able to lead you on the trip.

On the following page is a map of Alaska showing the existing National Wildlife Refuges. You will notice that most of them border a sea or ocean. What reasons could you give for this?

NATIONAL WILDLIFE REFUGES IN ALASKA



ENDANGERED BIRDS OF ALASKA

The four endangered species of Alaska are the Aleutian Canada goose, peregrine falcon, Eskimo curlew, and the short-tailed albatross. The major reasons for their decline are the effects of pesticides in the food chain and predation.

The Aleutian Canada goose is a very small race of the Canada goose, only slightly larger than the tiny cackling goose. As far as known, it presently nests only on Buldir Island in the Aleutian Chain, although it was formerly found on many Aleutian islands. In winter the Aleutian Canada geese migrate to Japan and also down the Pacific Coast to California.

The reason for the decline of this species is believed to have been predation on nesting birds by arctic foxes brought to these islands by fox farmers. Introduced rats may also have been a contributing factor. Neither foxes nor rats were introduced to Buldir Island because of its relative inaccessibility, and this is presumed to be the reason for the survival of the estimated 300 individuals which continue to nest there.

The peregrine falcon is also on the endangered species list in Alaska. While the present distribution of the American peregrine subspecies includes breeding grounds stretching from Alaska and Canada south to Baja, California, central Arizona, and Mexico, the smaller, paler arctic peregrine breeds in the treeless tundra of arctic Alaska, Canada, and western Greenland. This subspecies migrates south through eastern and middle North America to

the Gulf Coast, and then south as far as Argentina and Chile. The American peregrine has recently been destroyed as a breeding species east of the Rocky Mountains in the United States and in the majority of the eastern Canadian provinces.

It is the migratory habit of these rapid-flying, highly effective predators which has partially contributed to their lowered numbers. Evidence points to the harmful effects of pesticides and their break down products obtained from their prey. These chemicals have increased adult deaths and reduced production of young, particularly by causing eggs to become thin-shelled. Certainly the major portion of this contamination occurred outside Alaska, as we have few agricultural or pastoral areas where pesticides have been used in abundance. Some habitat destruction and the past collection of young and adults for falconry purposes have also been factors, particularly with the more southern-living American peregrine. The most often heard suggestion to protect the peregrine falcon is to work toward the elimination of food chain pesticides in the environment. While our laws make it illegal to hunt or take these birds, state and federal agencies involved in the regulated use of pesticides need to be fully aware of the dangers confronting numerous beneficial predators, if these birds are to survive.

The Eskimo curlew and the short-tailed albatross are the other two species which are on Alaska's formal list of endangered species. This listing is based merely on the fact that both species had been, at some time in the past, observed in Alaska or Alaskan waters.

Eskimo curlews were considered extinct for many years and then a few individuals were seen on wintering grounds in the southern United States. The most recent observations in Alaska date back to the 1800s.

The waters of Alaska are at the edge of the range of the short-tailed albatross. It is rarely seen here. It nests on islands owned by Japan and is nearly extinct because of harassment there.

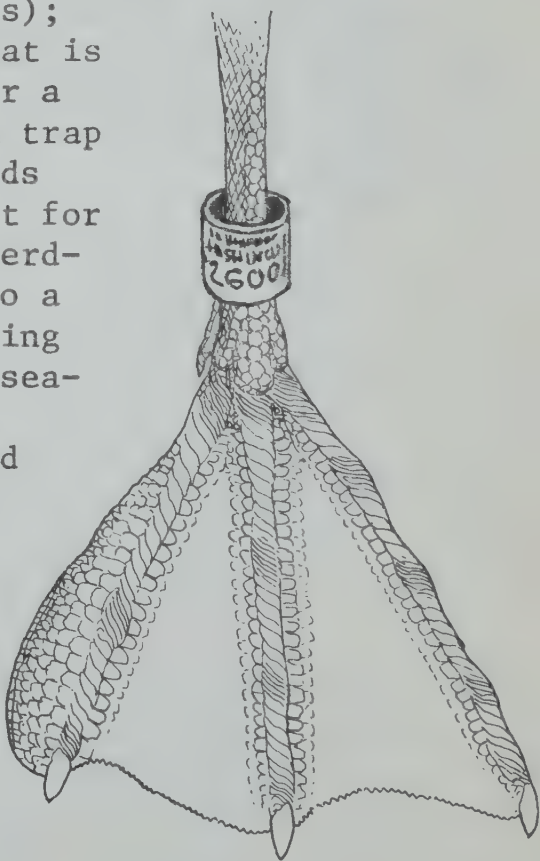
Only in the past few years have most Americans become aware of the decline of our wildlife. Now scientists, conservation organizations, and concerned people the world over are working to save numerous endangered species.

In North America alone there are many species of birds that are endangered. You might be interested in reading about the tremendous efforts to save the whooping crane, the Kirtland's warbler, or the southern race of the bald eagle.

BIRD BANDING

Modern bird banding had its beginning in 1890 in Denmark when Hans Christian Mortensen began putting metal bands on the legs of storks, starlings, teal, and other birds. The first organized group of bird banders in America was formed in 1909. Since then over 30 million birds have been banded in North America. Every year over one million birds are banded.

The first step to banding a bird is, of course, capturing that bird. Many different ways of capturing birds are used, depending upon the size and species of birds being caught. A few examples are: 1. mist net (a very fine net strung between two objects to create a barrier into which the bird flies); 2. cannon net (a net that is shot through the air over a flock of birds); 3. box trap (a box that captures birds that walk or drop into it for food); 4. drive trap (herding flightless birds into a corral during their molting period. Molting is the season when waterfowl lose their flight feathers and for a short time cannot fly). Great care must always be taken not to injure or unnecessarily frighten the birds when the band is put around the leg of the bird.



Data are collected for every bird that is banded: species, age, sex, physical condition, location of the banding, date, and the actual number on the band itself. Some birds, besides being banded on the leg, may be color marked in various ways so they can be recognized from a distance. Plastic neck collars, wing tags, colored leg bands, and paints and dyes are other means of marking birds.

Who can band birds? Only those people who have met the specific scientific requirements of the U.S. Fish and Wildlife Service can hold a banding license which then allows them to trap and band birds.

How can we help? Not everyone can band birds, but we can all help by looking for and sending in any bands we find on dead birds. In fact, the study of banded birds would fail were it not for the many people who report finding dead birds with bands. The bands must be found and returned to be of any value.

What do you do when you find a banded bird? First, remove the band from the bird's leg and flatten it out. Then tape it securely to a piece of heavy paper. Send in the following information with the band: 1. your name and address (printed plainly); 2. all numbers and letters on the band; 3. the date you found the band; 4. the place you found it (mileage and direction from the nearest town, with county or borough and state included); 5. how you found the bird band; 6. place the band and information in an envelope, mark it "Hand Cancel," and send it to:

Bird Banding Laboratory
U.S. Fish and Wildlife Service
Laurel, Maryland 20811

If you see a live bird with a band, do not remove the band, but carefully read the number on the band, write it down, and send the number, along with any other information, to the above address.

Later you will receive a Certificate of Appreciation from the Bird Banding Laboratory telling you when and where the bird was banded, what kind of a bird it was, and who banded it. The person who banded it will also learn when and where you found the band and will be very grateful to you for your cooperation.



DUCK STAMPS

By law, hunters age 16 and over are required to have a state hunting permit and a Migratory Bird Hunting Stamp in their possession before hunting ducks and geese (also swans, crane, and snipe). This stamp is more popularly known as the "Duck Stamp."

What is a Duck Stamp? It is a revenue stamp, the sale of which produces money which is used to purchase, develop, and maintain critical waterfowl habitat. Hunters are not the only people who buy stamps. About 18% of the stamps are sold to stamp collectors who are interested in the beauty and artistic value of the stamps. (The average sales in Alaska between 1964 and 1974 have been about 11,492, with a high of 16,449 in 1973, and a low of 8,826 stamps in 1964.)

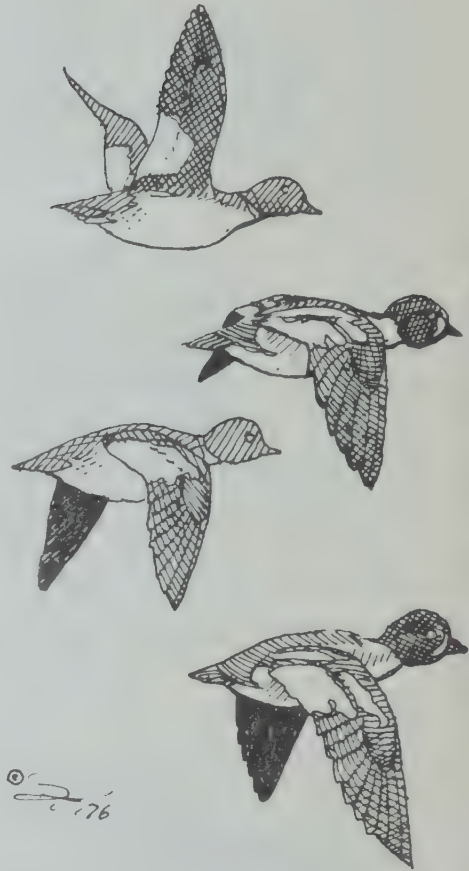
In the early 1930s conservationists and sport hunters were concerned about hunting pressures on America's birds. The depression years had greatly increased the numbers of hunters who needed food on their own tables or who sold their birds to someone else. This increase in hunting, plus drought and the draining of marshes drastically reduced the numbers of waterfowl in North America.

In 1934, the Migratory Bird Hunting Stamp Act was enacted to provide the funds that would be required to reverse this trend. Over a period of more than 40 years, stamp sales have produced more than \$100 million. These funds have purchased land and preserved or created approximately two million acres of wetlands for waterfowl production. Since a large percentage of these wetlands are open to hunting, the

sportsman's money has been effectively spent in his own behalf.

The provisions of the Migratory Bird Hunting Stamp Act are administered by the U.S. Department of the Interior's Fish and Wildlife Service. Each year artists compete for the honor and recognition of having their drawing on the stamp. They receive no monetary reward. The stamps are sold in post offices, sporting goods' stores, and state license outlets throughout the nation. They are valid from July 1 through June 30. Since 1972, the price for a stamp has been \$5.00.

Pictured on the 1974 Duck Stamp on the bird chart is the Steller's eider, a bird which spends most of its life in various parts of Alaska.



LIST OF ILLUSTRATIONS

Cover.....	Tufted Puffin
Title page.....	Polynesian Tattler
"Kittiwake Seagull".....	Black-legged Kittiwake
Acknowledgements.....	Hammond's Flycatcher
Table of Contents.....	Marbled Murrelet
	Page
Hawk Owl.....	3
Manx Shearwater.....	4
Common Redpoll.....	5
Horned Puffin.....	6
Spruce Grouse.....	7
Arctic Loon.....	10
Raven.....	11
Mandt's Black Guillemot.....	12
Wheatear.....	13
Sandhill Crane.....	14
Willow Ptarmigan.....	15
Habitat Map of Alaska.....	17
White-winged Crossbill.....	18
Belted Kingfisher.....	20
Refuge Map of Alaska.....	21
Loon's Foot with Band.....	25
Far Eastern Curlew.....	27
Barrow's Goldeneye.....	29
Rhinoceros Auklet.....	31
Buff-breasted Sandpiper.....	33
Gyr Falcon.....	47
Back cover.....	Crested Auklet

QUESTIONS THAT CAN BE ANSWERED
FROM THE CHART



1. What is the name of the Alaskan state bird?
2. Which bird was chosen as our national bird?
3. Which migratory bird on the chart flies the longest distance?
4. Which of the birds on this chart have you seen near your home?
5. Many birds fly to another part of the world in the winter. These are called migratory birds, or migrants.
 - (a) Which of the birds you named in question 4 spend the winter near your home?
 - (b) Which of the birds you named in 4 are migratory birds?
 - (c) Where do these migrants go for the winter?
6. Do you have any birds near your home which traveled north along the Pacific Flyway? Which might have followed the Central Flyway? Mississippi Flyway? Atlantic Flyway?
7. The word "habitat" means the place where a plant or animal can find the right food, shelter, water, temperature, and other things it needs to live. What can you tell about the habitat of each of these

birds: dipper (#25), gray jay (#23),
common loon (#1), Lapland longspur (#27)?

8. Are mosquitos pests near your home?
Which bird helps destroy these insects?
What might happen to this bird if man
were to use poisons to kill all the
mosquitos?
9. What is the main food of each of these
birds: black brant (#4), tree swallow
(#21), bald eagle (#11), common loon (#1)?
10. With most species of birds the male has
the brightest feathers and the female
incubates the eggs. Which species on
this chart is just the opposite--the
female is the brightest colored and the
male incubates the eggs?
11. How do long legs help the sandhill crane
(#13)? How do feathered feet help the
ptarmigan (#12)?
12. Which birds on the chart would you expect
to find in a coastal marsh (#38)? in
Hawaii (#37)? near a drainage project
(#39)?
13. Look at the picture of a suburban area
(#33). Which birds do you think once
lived there before the city was built?
Which birds might still remain in a
suburban habitat?
14. How does protective coloration benefit
birds such as the willow ptarmigan (#12)
or the snow bunting (#28)?

QUESTIONS TO STIMULATE
FURTHER RESEARCH



1. George Wilhelm Steller was a German naturalist who came to Alaska with Vitus Bering in 1741. Many animals and plants were identified by him. Make a report of Steller's discoveries and adventures in Alaska. One fascinating animal which Steller saw was the Steller's sea monkey. It had

never been seen before and it has not been seen since. You can read about it in the book, Where the Sea Breaks its Back by Corey Ford. (It is interesting to know that Steller spent only 10 hours on land in Alaska. The rest of his visit was spent at sea.)

2. Man builds roads and cities. We call this "progress." How might a bird like the canvasback (#8) describe man's progress?
3. What signs of progress do you see near your home? How are birds and other wildlife affected by the progress in your area? Give specific examples of animals which may have to look elsewhere for a new home? What happens to plants when a habitat is changed?
4. What can you do to keep your area a good habitat for your favorite creatures? What can you do to improve the habitat for your favorite birds? Use your library to find ways to attract birds.

Perhaps you and your classmates can build a feeding station or a nesting box for birds in your community.

5. One of the most well-known birds in Alaska is the raven (#24). Why do you think it is able to live in nearly every part of our State? The chart mentions that the raven is considered very intelligent. How might its intelligence help it live in so many different habitats?
6. You will notice on the chart that several of the birds have two names; e.g., #27, the Lapland longspur was once called the Alaska longspur). Occasionally the name of a bird has been changed; e.g., #19, the Pacific murre is now called the common murre. Why do you think name changes occur? How might bird banding contribute to a name change?
7. The willow ptarmigan (#12) was chosen as the Alaska state bird. List as many reasons as you can why you think that bird was selected.
8. The beautiful trumpeter swan (#2) was once nearly extinct, but now it is out of immediate danger. What people and countries were responsible for helping this bird? What did they do to save it?

BIRD GAMES AND ACTIVITIES

NAME THAT BIRD: Cut out pictures of birds. Mount each picture on a separate piece of sturdy paper. On the back of the paper write the name of the bird that is pictured. Make smaller word cards with just the name of the bird on the card. The student is to match the word card with the bird card. To see if the identification is correct, simply turn over the picture card and check your answer.

Willow Ptarmigan	Dipper	Northern Phalarope	Carrion
Extinct	Common Raven	Refuge	Scaup
Common Loon	Colony	Lapland Longspur	Snow Bunting
Puffin	Steller's Jay	Tundra	Tree Swallow

BIRD BINGO: Make a bingo card for each student. Use words, definitions, and bird names related to the Alaskan Birds Chart. Rearrange the words on each card and substitute new words on some of the cards. Each card must be different. Make a list of 20 or more questions (the answers to the questions are the words on the bingo card.) Give each student a card and a handful of markers which have been cut from scraps of colored paper. Ask a question; e.g., What is another word

for dead meat? Answer: Carrion. If a student knows and has the answer on his card, he covers the word with a marker. When a student fills four squares in a row (vertical, horizontal, diagonal) he yells "Bingo!" If his answers are correct he wins that game. A variation is to fill the entire card.

IDENTIFICATION FLASH CARDS: Often the problem of bird identification can be overwhelming. When students observe a bird, encourage them to notice three significant facts about that particular bird; for example, swims, is very small, spins in tight circles on water. If three clues are not enough for positive identification, add a fourth, or fifth. For example, the above clues identify any of the three species of phalarope. A fourth clue--it has a reddish throat, breast, and belly--tells that it is the red phalarope. List the clues on the front of a card. On the back write the name of the bird.

COMPLETE THE BIRD: Give each student an incomplete drawing of a bird. Tell them which type of bill to draw on it; e.g., a probing bill. To increase the difficulty, do not tell them which type of bill to draw. Let them choose the proper one. The same activity can be used with a study of feet, wings, and tails. After the bird is complete, cut it out. On one side color the male bird. On the opposite side color the female. Make a mobile with the birds.

BUILD A TREE SWALLOW HOUSE

Although the tree swallow is usually not found on the North Slope or the far Aleutian Islands, it can be found throughout the rest of Alaska. The tree swallow is one of the few birds in Alaska that will readily accept a nesting box. Your class might make a box and place it outside the classroom window so it can be easily observed. Often a new nesting box will not be used the first year but may be quickly accepted the next year.

The box shown here is easily constructed of any wood such as pine. $3/4$ " wood is an easy thickness to work with. A board 4' long and $5\frac{1}{2}$ " wide will be easy to handle. You will need 6 pieces of wood cut to these dimensions:

front: $9 \times 5\frac{1}{2}$	bottom: $4 \times 5\frac{1}{2}$
2 sides: $9 \times 5\frac{1}{2}$	top: $10 \times 5\frac{1}{2}$
back: $12 \times 5\frac{1}{2}$	

After cutting the wood, drill a $1\text{-}5/8$ " entrance hole in the front piece. Drill the hole in the middle of the board about 3-4" down from the top of the board. Below the entrance hole about $\frac{1}{2}$ ", drill a small hole for a perching dowel or stick. Insert a short dowel into the hole just before putting the house up.

Assembling the house:

1. nail the front to the sides
2. nail on the bottom (drive the nails in part way only, then they can be pulled out to remove the old nest)
3. add the back
4. nail on the top
5. insert the stick or perching dowel

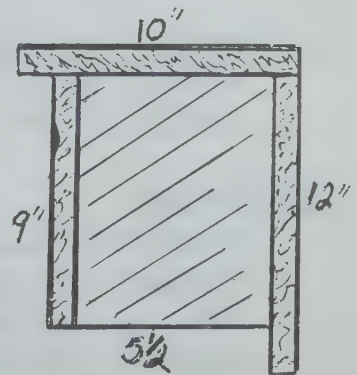
Placement of the nesting box is extremely important and success can depend upon where it is placed. Tree swallows prefer open spaces. Place the box on a pole or dead tree in the open, being sure no shrubs or trees are nearby. Boxes attached to houses or garages are often acceptable.

Helpful Hints When Building a Bird House:

1. Build for a specific species. Each bird has its own requirements for size, box placement, etc.
2. Hinge the top, back or bottom so the box can be cleaned yearly. If possible, burn the old nest.
3. Place the box entrance away from prevailing winds.
4. One or two small drainage holes in the bottom will help keep the box dry.
5. A few small air circulation holes at the top side of the box will keep it cool in hot weather.
6. To prevent cats and other climbing predators from robbing your bird house, place a sheet metal guard, at least 18" long, around the pole or tree on which the box is placed. Secure the guard high enough so a cat cannot jump over it.

An interesting observation about tree swallows is that they have a fondness for white feathers. Often the feathers are used to line the bird's nest.

Shown here is the side view of the tree swallow house you can build following the above measurements. Notice how the boards fit together.



BIRD CHART GLOSSARY

accidentals

species of birds that have been recorded once, or perhaps more than once, but are so far out of their normal range that they might not be expected again.

carrion

the decaying flesh of a dead animal, source of food for many animals and birds.

colony

groups of birds nesting in close association.

decimated

greatly reduced in number.

extinct

no longer living, a plant or animal species that has died out.

habitat

the place where a plant or animal can find the right food, shelter, water, temperature, and other things it needs to live.

migrant

a bird whose stay is brief while flying between its summer and winter homes.

permanent resident

a bird which is found within a certain locality throughout the year.

pesticides

chemicals used to control insects or other animals or plants considered to be pests. Most pesticides will affect other forms of life in addition to target species.

plumage

the feathers of a bird

populations

the total number of individuals in a group.

refuge

an area set aside that offers safety, shelter, and food for wildlife.

sea birds

birds that spend most of their lives on the ocean, and return to land to nest.

shorebirds

a group of birds that nest on land, but spend most of their lives along the edges of bodies of water.

species

plants or animals which are different and unique because they normally breed only with their own kinds.

waterfowl

ducks, geese, and swans.

GENERAL BOOKS FOR STUDENTS

REFERENCE

- Angell, Madeline. 120 Questions and Answers About Birds. New York: Bobbs-Merrill, 1973.
- Dugdale, Vera. Album of North American Birds; illus. by Clark Bronson. New York: Rand McNally, 1967. (Grades 4-6.)
- Kiernan, John. An Introduction to Birds. New York: Doubleday, 1950. (Grades 5-9.)
- Peterson, Roger Tory. The Birds, by Roger Tory Peterson and the Editors of Time-Life. New York: Time, Inc., 1963. (Grades 6 and up.)

BIRD MIGRATION AND BOOKS ABOUT BIRDS ON THE CHART

- Ackerman, Eugene. Tonk and Tonka. New York: E.P. Dutton, 1962. (Canada Goose.)
- Annixter, Jane and Paul. Trumpeter: The Story of a Swan. New York: Holiday House, 1973.
- Gallup, Lucy. Spinning Wings. New York: Morrow, 1956. (Tern.)
- George, John Lothar. Dipper of Copper Creek. Dutton, 1956.
- Hamberger, John. The Call of the Loon. New York: Four Winds Press, 1969.

- Kaufmann, John. Wings, Sun, and Stars: The Story of Bird Migration. New York: Morrow, 1969. (Grades 6 and up.)
- McClung, Robert. Honker: The Story of a Wild Goose. New York: Morrow, 1965. (Grades 3-6.)
- Mannheim, Grete. The Geese are Back. New York: Parents' Magazine Press, 1969.
- Mason, Edwin. Swans and Wild Geese. Princeton, N.J.: Van Nostrand, 1968.
- May, Julian. Eagles of the Valley. Mankato, Minn.: Creative Educational Society, Inc., 1972.
- Murie, Adolph. Birds of Mount McKinley National Park. Mount McKinley Natural History Association: 1963.
- Shackelford, Nina. When Birds Migrate. Austin, Texas: Steck-Vaughn Co., 1968.
- Van Wormer, Joe. World of the Canada Goose. Philadelphia: Lippincott, 1968.
- Welty, Susan E.F. Birds With Bracelets: The Story of Bird-banding. Prentice: 1965. (Grades 4-7.)
- Whitten, Leslie H. Pinion, the Golden Eagle. Princeton, N.J.: Van Nostrand, 1968.

ADDITIONAL RELATED BOOKS

- Bodsworth, Fred. Last of the Curlews. Garden City, N.Y.: Doubleday, 1967.
- Brenner, Barbara. Is it Bigger Than a Sparrow? New York: Knopf, 1972. (Bird identification.)
- Burns, Aubrey. First Book of Bird Watching. New York: Watts, 1968. (Grades 4-6.)
- Cunningham, Julia. Viollet. New York: Pantheon, 1966. (Thrush.)
- Freshet, Berniece. The Flight of the Snow Goose. Crown, 1970. (Grades 2-4.)
- Glasgow, Aline. Honschi. New York: Parents' Magazine Press, 1972. (Chickadee in Japan.)
- Hoke, Helen and Valerie Pitt. Owls. New York: F. Watts, 1975.
- Sanger, Marjory. Checkerback's Journey: The Migration of a Ruddy Turnstone. Cleveland: World, 1969. (European.)

OTHER REFERENCES

CULTURAL HISTORY OF NATIVE ALASKAN PEOPLE

Ackerman, Maria. Tlingit Stories. Alaska Methodist University Press, printed by Stanway/Wheelwright Printing Co., Salt Lake City, 1975.

Brean, Alice. Athabascan Stories. Alaska Methodist University Press, 1975.

Garfield, Viola and Forrest, Linn. The Wolf and the Raven. Seattle and London: University of Washington Press, paperback edition, 1961.
(legends and history surrounding the totem poles of southeastern Alaska.)

Gillham, Charles E. Beyond the Clapping Mountains. New York: The Macmillan Company, 1943.

Hall, Jr., Edwin S. The Eskimo Storyteller, Folktales from Noatak, Alaska. Knoxville: University of Tennessee Press, 1975. (Collection of 188 folktales of northwest Alaska.)

Lewis, Brian. Eskimo Myths. Ottawa: Department of Indian Affairs and Northern Development, 1968.
(Reader 13 of the Arctic Reading Series.)

Swanton, John. "Raven and the Fog Woman", Tlingit Myths and Texts. Anchorage, Alaska Bilingual Education Center, 1909.

Tales of Eskimo Alaska. Alaska Methodist University Press, 1971. (Written for children; legends of Native peoples.)

Vaudrin, Bill. Tanaina Tales from Alaska. Norman, Okla.: University of Oklahoma Press, 1969.

Yupiktak Bista. Does One Way of Life Have to Die so Another Can Live? State of Alaska, Department of Community and Regional Affairs, and the Friends of the Earth Foundation, 1975. (A report on subsistence and the conservation of the Yupik life-style.)

FINALLY...

It is my delight to thank again the many Anchorage Audubon members and friends who contributed their ideas, time, and talents to compile this guide. Dennis Bromley, Sally Brook, Jane Middleton, Ginny Stevens, Anne Wieland, and Merrilee Zenone, all dedicated teachers, studied the chart and contributed many articles and activity ideas. Dave DeLap shared his student games and his teacher's bibliography with us. Marilyn Warren drafted the maps and suggested layout recommendations while Cynthia Quinn turned endless lists of reading into recognizable bibliographies.

Ed Bailey, Dave Cline, Elaine Rhode, and Craig Rieben of the U.S. Fish and Wildlife Service spent countless hours critically analyzing the factual data and conservation concepts included in this booklet. Jim King, also with Fish and Wildlife, spent more time reviewing the final materials. Although I have yet to meet Jim, I know he is content to see his ideas become a reality.

Four friends merit special thanks for their tireless efforts and boundless enthusiasm with which they always worked. Elaine Pratt and Sharon Pitcher, with their dedication and optimism, proofread and typed rough drafts into smooth finished articles. John Pitcher donated his delightful drawings to enhance this guide and also helped with the final drafting. And finally Paul Howard, with his quiet confidence, was a major source of strength and inspiration throughout this project.

These people gave their best and through their dedication to education and conservation, Alaskan children will be able to share some of their knowledge and enthusiasm about birds.

My thanks,

Janet Klein

ET CETERA



For a more complete bibliography regarding books, materials and some films about birds and related subjects, send a self-addressed, stamped envelope with postage to cover two ounces for the first class mail to:
Anchorage Audubon Society
P.O. Box 1161
Anchorage, Alaska 99510

For membership information in either the National Audubon Society or the Anchorage Audubon Society, write to the above address.

The National Audubon Society publishes a pamphlet titled "Audubon Aids in Natural Science." These aids are especially suited to studies in ecology, conservation, earth sciences, and social studies. To obtain the pamphlet write:

Educational Services Department
National Audubon Society
950 Third Avenue
New York, N. Y. 10022

Western Regional Office
National Audubon Society
555 Audubon Place
Sacramento, CA 95825

"To me, a conservationist is one who believes in the wise use, and re-use where possible, of all natural resources; who abhors their waste; who detests their abuse; who believes they are precious and should never be undervalued. The conservationist loves wildlife and wild places and has a healthy respect for all living things, and thus for the whole natural system--land, water, air, animals and plants, and the interactions of all these in ever-evolving processes, powered by the energy of the sun--which sustains life on this Earth. And that includes human life."

President Elvis J. Stahr
National Audubon Society

29400

Pam:598.2: (*49)
AAS

ANCHORAGE AUDUBON SOCIETY
AUTHOR

A guide to the Audubon Alaskan
TITLE

birds chart

DATE
LOANED

BORROWER'S NAME

DATE
DUE

29400

*Including
1 guide map*

BOREAL INSTITUTE
FOR NORTHERN STUDIES LIBRARY

THE UNIVERSITY OF ALBERTA
EDMONTON, ALBERTA. T6G 2E9





Chimney Swift

Bald Eagle



Purple Martin



Red-tailed Hawk



Barn Swallow



Canada Goose



Mourning Dove



Meadowlark



American Bittern



Screech Owl



Horned Lark



Barn Owl



Black-headed Grosbeak



Goldfinch



Bluebird



Cedar Waxwing



Blue Jay



Red-winged Blackbird



Towhee



White-breasted Nuthatch



House Wren



Mockingbird



Robin



Red-headed Woodpecker



Red-eyed Vireo



Phoebe



Starling



Lazuli Bunting



Sparrow Hawk



Red-breasted Nuthatch



Yellow-throat



Spotted Sandpiper



Pintail



California Quail



Mallard



Herring Gull



Great Blue Heron

AUDUBON BIRD CALENDAR

Illustrated by ROGER TORY PETERSON

It's fun! Keep a record of the birds you see.
Compare it from year to year.

NAME OF BIRD

DATE FIRST SEEN

Who saw it and what was it doing

Seen in the following habitats (check one)

MARSH

MEADOW

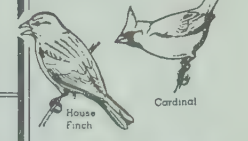
FOREST

OTHER



Baltimore Oriole

Killdeer



House Finch

Cardinal



Kingfisher

Downy Woodpecker



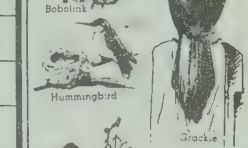
Scarlet Tanager

Catbird



Bobolink

Grackle



Hummingbird

Flicker



Song Sparrow

Chickadee



Steller Jay

Golden-crowned Kinglet



Junco

Bob-white



Educational Service
NATIONAL AUDUBON SOCIETY
930 Third Avenue, New York, N.Y. 10022

Copyright 1956

EM 1275 ME - U.S.A.

Pam: 598.2: (x4)

BIRD MIGRATION

MIGRATION ROUTES

- Atlantic Ocean Flyway
- Atlantic Coast Flyway
- Atlantic Coast Flyway
- Mississippi Flyway
- Central Flyway
- Mountain Flyway
- Pacific Flyway
- Arctic Tern Routes*
- Pacific Golden Plover
- Cross Country Flyway

*Those nesting in Eastern North America cross ocean to Europe and fly south along African coast and across south Atlantic. Those nesting in west follow along Pacific coast of North and South America.

RANGE AND PRINCIPAL ROUTES FOLLOWED

Bird	Summer Farthest North	Winter Farthest South	Route
Arctic Tern	AT	at	8
Baltimore Oriole	BO	bo	6
Belted Kingfisher	BK	bk	4, 3
Black-billed Cuckoo	BC	bc	3
Bobolink	B	b	3
Canada Goose	CG	cg	10, 3
Canvasback Duck	CD	cd	10, 3
Golden Plover (<i>Atlantic</i>)	GP(A)	gp(a)	4, 1
Golden Plover (<i>Pacific</i>)	GP(P)	gp(p)	9
Pintail Duck	PD	pd	5, 3
Red-eyed Vireo	RV	rv	3, 5
Redstart	R	r	2, 6
Ruby-throated Hummingbird	RH	rh	4
Scarlet Tanager	ST	st	4
Western Tanager	WT	wt	7
Yellow-billed Cuckoo	YC	yc	3
Yellow Warbler	YW	yw	4, 5

GM-10 70 P50 14 U.S.A

BIRD STUDY

Bills, Feet, Tails and Wings reveal many bird habits — they are wonderful examples of nature's amazing ingenuity in solving the problems of survival.

FOR EXAMPLE:

Harry Woodpecker

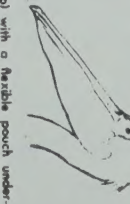
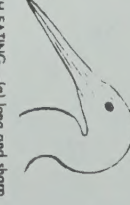
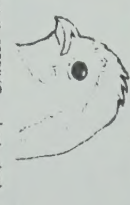
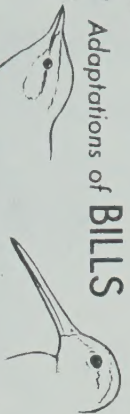
Overweight by Walter Ferguson



Adaptations of BILLS

the WOODPECKER'S strong, chisel-shaped bill is adapted for chipping wood as a means of boring into trees in search of grubs. Its feet have two sharp toes directed forward and two backward which clamp the bird securely to the tree trunk in an erect position. Sharp-pointed tail feathers act as props to steady the woodpecker while it uses its bill as a hammer.

BILLS of birds are variously adapted for procuring different foods and serve also for nest building, preening feathers and for protection. FEET are built for perching, scratching, walking, swimming, for seizing prey. WING size and shape vary greatly. Some wings are designed for soaring, for sudden turns and rapid flight, for easy long distance travel. TAILS provide balance when perching and flying; are rudders during flight.



SEED-EATING—(a) short, thick bill for crushing seeds. Examples: Sparrow, Grosbeak, Junco. (b) upper and lower mandibles crossed to enable bird to extract seeds from cones of evergreen trees. Example: Crossbill (shown)

INSECT-EATING — (a) slender, pointed beak for picking up insects. Examples: Warbler, Vireo (shown) (b) very wide mouth for catching insects on the wing. Examples: Swallow, Nighthawk, Swift

PROBING—(a) long, slender bill for probing in mud in search of food. Examples: Snipe (shown), Woodcock, other Sandpipers (b) long, slender bill for probing insects on the wing. Example: Hummingbird

PREYING—strong, sharp, hooked bill for tearing flesh of prey. Examples: Owl, Hawk, Falcon (shown)

STRAINING—broad, flattened bill for straining food from mud. Examples: Flamingo, Duck, Goose (shown)

GROUND-FEEDING—short, stout bill for feeding on the ground, as a hen. Example: Bob White (shown)

FISH-EATING—(a) long and sharp bill for spearing fish. Example: Heron (shown) (b) with a flexible pouch under mouth bill for holding captured fish. Example: Pelican (shown)

Adaptations of WINGS



Long, pointed wings for fast, easy flight in the pursuit of flying insects. Examples: Swallow, Swift (shown)



Long, broad wings for strong, soaring, effortless flight. Examples: Hawk (shown), Eagle



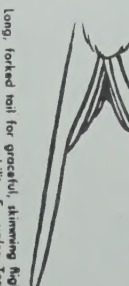
Short, rounded wings for speedy take off and fast flight over comparatively short distances. Examples: Sparrow, Quail, Pheasant (shown), Woodcock, Grouse



Tail feathers with strong spine-like tips for use as a prop or support when clinging to vertical surfaces. Examples: Woodpecker, Swift, Brown Creeper (shown)



Broad, formed tail for soaring. Example: Buteo type Hawk (shown)



Long, forked tail for graceful, skimming flight and extreme maneuverability. Examples: Barn Swallow (shown), Frigate Bird, Swallow-tailed Kite

Adaptations of TAILS



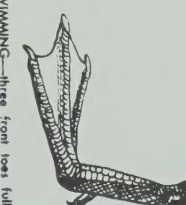
PERCHING—three toes in front, one toe behind. Most familiar birds are of this type. The foot automatically clasps the perch when the leg is relaxed. Examples: Sparrow, Chickadee, Robin (shown)



WADING—long legs, long, slender toes. The three long toes keep bird from sinking into the mud. Examples: Gallinule, Heron, Sandpiper (shown)



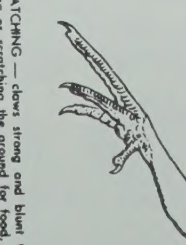
PREYING—powerful feet and legs with strong, curved, sharp talons for grasping prey. Examples: Hawk, Owl, Eagle (shown)



SWIMMING—three front toes fully webbed. Examples: Goose, Gull, Duck (shown)



CLIMBING—two toes in front, two toes in back; sharp claws for clinging to an upright surface with ease. Example: Woodpecker (shown)



SCRATCHING—claws strong and blunt for raking or scratching the ground for food, as a hen. Examples: Pheasant, Quail, Grouse (shown)

BIRD 21NDY



POLAR
PAM
3253
map
POLAR PAM

ALASKAN BIRDS



Educational Services
National Audubon Society
950 Third Avenue
New York, N.Y. 10022

Audubon
Aids



The bird pictures on this chart are numbered and a number is placed on the map where some of these birds spend the winter. Very few Alaskan people ever see the strange and interesting places or travel nearly as far as some of our littler birds do every year.

You may wonder why birds come so far to nest each year. Birds need lots of room in which to build nests and find the extra food they will need to feed their young. By looking at a globe you can see that there is a lot more land to the north of the equator than there is to the south. So, when nesting time comes in the spring, the large winter flocks leave the south and fly to the more open spaces in the north. Harsh winter weather drives most birds south again.

Most Alaskan birds follow one of the four American "Flyways" or three Pacific "Routes" which are marked on the map. Some birds stop to nest while others pass through Alaska to Canadian or Siberian nesting sites.

The first naturalist to observe and keep records of Alaskan birds was Georg Wilhelm Steller. He landed on Kayak Island in 1741 as part of a Russian expedition. The Steller's Jay and the Steller's sea cow (extinct since 1768) were named after him, as were several other animals.

Since then, some 321 species of birds have been identified in Alaska. Slightly less than half of these are water birds, the others are land birds. 174 species are permanent residents in this state and the others are migrants. Occasionally, accidentals may be seen, which have come from the Old World or from South America.

Only 28 species of birds are shown on this chart but each of the 321 species to be found in Alaska is, in its own way, as interesting, as pretty and as important as the ones shown.



1) **COMMON LOON:** This big diver with the lonesome call can be found nesting around lakes with a good fish supply. Only larger lakes have more than one pair. Winters in southeast Alaska and south.



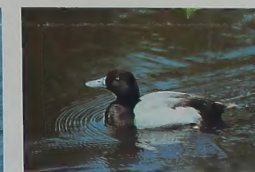
2) **TRUMPETER SWAN:** Largest waterfowl in the world. Larger than the more common Whistling Swan. Thought to be nearly extinct in 1900, now numbers several thousand, three-quarters of which nest in interior and South Central Alaska.



3) **CANADA GOOSE:** Five of the ten types are found in various parts of Alaska. The small Aleutian form which has a white neck-ring has been decimated by foxes that were introduced by fur farmers and only a few hundred survive on Buldir Island. An attempt is being made to restore them on several islands.



8) **CANVASBACK:** Breeds in small numbers in Alaska and winters on both Atlantic and Pacific coasts. This widespread duck is having a difficult time adjusting to the changing conditions in America. Its numbers decreased seriously in the 1950's.



9) **SCAUP:** Comes in two sizes which together make the Scaup Alaska's most abundant and widely distributed duck. The Greater Scaup winters from New York City south and in California. The Lesser winters in the Gulf of Mexico and as far south as Panama.



10) **SPECTACLED EIDER:** The least common of the 4 eiders found in Alaska. This beautiful duck winters in the Aleutians and is never seen far from the Bering Sea area.



15) **PACIFIC BAR-TAILED GODWIT:** The only common shorebird in Alaska with an upturned bill. Visits North America only in Alaska. Migrates through Japan to winter from south China to New Zealand.



16) **NORTHERN PHALAROPE:** The best swimmer of the shore birds may be seen over most of Alaska in spring. Winters off shore in the Southern Hemisphere. Unlike other birds, the female has the brighter plumage and the male incubates the eggs and cares for the young.



17) **RED-LEGGED KITTIWAKE:** The red legged kittiwake (above) and the black-legged kittiwake (not shown) are distinguishable by leg coloration. The red-legged kittiwake, a localized resident of Alaska, nests in four known locations. The black-legged-kittiwake is a common sea cliff nester. It winters down both sides of the Pacific.



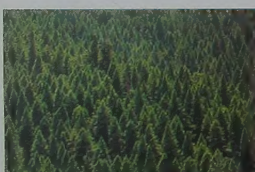
22) **STELLER'S JAY:** This attractive bird was observed and first described by Georg Wilhelm Steller on the day in 1741 when Russians discovered Alaska. It was later named for him. It is a year-round resident of Southeast Alaska.



23) **GRAY JAY:** The friendly "camp robber" of the interior forests. This bird can't wait for spring to nest and may have its family on the wing by the time the snow melts and the other birds arrive.



24) **COMMON RAVEN:** This versatile "talker" and masterful "stunt" flyer can be found summer or winter all over Alaska. He figures prominently in Native art and custom and is considered very intelligent.



29) **NORTHERN FOREST:** The home of the Alaska Gray Jay. On adjacent waters are found the Lesser Scaup, Common Loon and other water fowl.



30) **TUNDRA:** Typical of the far north where the Alaska Longspur, Golden Plover and Willow Ptarmigan nest.



31) **WINTER REFUGE SCENE:** This refuge is near cities which offer no protection for flocks of migrating birds. Food is planted and water regulated here, so that more birds can use the space than could when it was a natural wild area.



32) **WHEAT FARM:** As birds get farther south they are seldom very far from the farms and homes of man. Some help themselves to farm crops but others may have a difficult time finding the wild places they need.



33) **SUBURBAN AREA:** This area was once fields and forests where many birds could live. Some birds still live here but some had to find new homes.



34) **THE ORIENT:** Many birds, e.g. the Red-faced Cormorant, breed in Alaska but spend the winter in the Orient. The coast of Japan, shown here, is a typical wintering ground.



35) **CITY WATERFRONT:** Geese may once have nested here. Harbors are dangerous for water birds as there is apt to be oil on the water. There are no good resting or feeding places here. These areas will not support local or migrant birds unless refuges are provided nearby.



36) **PRAIRIE POTHOLES:** Many of our birds visit the prairies during migration. Important refuges are being established here to take the place of land drained for farms.



37) **HAWAII:** The Islands of the mid-Pacific provide comfortable homes for birds during Alaska's long winter.



Educational Services
National Audubon Society
950 Third Avenue
New York, N.Y. 10022

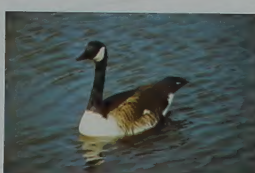
Audubon Aids



1) COMMON LOON: This big diver with the lonesome call can be found nesting around lakes with a good fish supply. Only larger lakes have more than one pair. Winters in southeast Alaska and south.



2) TRUMPETER SWAN: Largest waterfowl in the world. Larger than the more common Whistling Swan. Thought to be nearly extinct in 1900, now numbers several thousand, three-quarters of which nest in interior and South Central Alaska.



3) CANADA GOOSE: Five of the ten types are found in various parts of Alaska. The small Aleutian form which has a white neck-ring has been decimated by foxes that were introduced by fur farmers and only a few hundred survive on Buldir Island. An attempt is being made to restore them on several islands.



4) BLACK BRANT: This "Sea Goose" nests on the Yukon Delta, migrates non-stop across the Gulf of Alaska, then down the coast to Mexico. Feeds primarily on Eel Grass, except while nesting, and is seldom found far from the bays where it grows.



5) EMPEROR GOOSE: The "Beach Goose" is a bird of both sides of the Bering Sea, nesting on the northern tundras and wintering in the Aleutians. It is seldom seen anywhere else.



6) SNOW GOOSE: A common migrant in many parts of Alaska, but a rare nester. Nesting populations near Point Barrow may have been destroyed by reindeer. Winters in California and crosses Alaska to Canada and Siberia.



7) PINTAIL: Alaska's most common nesting duck. Winters all over the southern U.S. and on the Pacific Islands. Also nests in Eurasia and sometimes migrates through Alaska to nest in Siberia.



8) CANVASBACK: Breeds in small numbers in Alaska and winters on both Atlantic and Pacific coasts. This widespread duck is having a difficult time adjusting to the changing conditions in America. Its numbers decreased seriously in the 1950's.



9) SCAUP: Comes in two sizes which together make the Scaup Alaska's most abundant and widely distributed duck. The Greater Scaup winters from New York City south and in California. The Lesser winters in the Gulf of Mexico and as far south as Panama.



10) SPECTACLED EIDER: The least common of the 4 eiders found in Alaska. This beautiful duckling form in the Aleutians and is never seen far from the Bering Sea area.



11) BALD EAGLE: Our National Bird. Becoming rare in many parts of the U.S. as a result of the use of pesticides and destruction of nesting areas. More common in Alaska than any other part of the U.S. Feeds extensively on spawned-out salmon and caribou but seldom on live fish.



12) WILLOW PTARMIGAN: The official State Bird of Alaska is found in every section. These birds never travel far but vary greatly in abundance from year to year.



13) LESSER SANDHILL CRANE: Its powerful voice is heard as it migrates in great V's high in the sky. Winters to Northern Mexico. A common Alaskan nester but many pass through to nest in Siberia.



14) AMERICAN GOLDEN PLOVER: May be seen in many parts of Alaska in Spring. Some of these remarkable birds fly directly across the Pacific to the Hawaiian Islands for the winter while others cross the continent and winter on the Atlantic shores of South America.



15) PACIFIC BAR-TAILED GODWIT: The only common shorebird in Alaska with an upturned bill. Visits North America only in Alaska. Migrates through Japan to winter from south China to New Zealand.



16) NORTHERN PHALAROPE: The best swimmer of the shore birds may be seen over most of Alaska in spring. Winters off shore in the Southern Hemisphere. Unlike other birds, the female has the brighter plumage and the male incubates the eggs and cares for the young.



17) RED-LEGGED KITTIWAKE: The red legged kittiwake (above) and the black-legged kittiwake (not shown) are distinguishable by leg coloration. The red-legged kittiwake, a localized resident of Alaska, nests in four known locations. The black-legged-kittiwake is a common sea cliff nester. It winters down both sides of the Pacific.



18) ARCTIC TERN: This common Alaskan nester is credited with the longest yearly migration of any creature. Some spend the winter as far south as Antarctica and may travel as much as 25,000 miles each year.



19) PACIFIC MURRE: Nests in colonies of up to 100 thousand on sea cliffs. Propels itself with ease through air or under water by use of its wings. A source of eggs for people: huge colonies have been "egged" out of existence farther south. Alaskan colonies have not been damaged.



20) PUFFINS: The two species nest in huge colonies near sea cliffs and on islands. Often called "sea parrot". They nest in burrows and rock crevices. Winter from the edge of the ice pack to the coast of California.



21) TREE SWALLOW: Feeding on flying insects, it must complete its household duties and depart, within the mosquito season. Nests in holes and if lots of bird houses are provided will help reduce mosquitoes nearby. Five other species are found in Alaska. Winters to South America.



22) STELLER'S JAY: This attractive bird was observed and first described by Georg Wilhelm Steller on the day in 1741 when Russians discovered Alaska. It was later named for him. It is a year round resident of Southeast Alaska.



23) GRAY JAY: The friendly "camp robber" of the interior forests. This bird can't wait for spring to nest and may have its family on the wing by the time the snow melts and the other birds arrive.



24) COMMON RAVEN: This versatile "talker" and masterful "stunt" flyer can be found summer or winter all over Alaska. He figures prominently in Native art and custom and is considered very intelligent.



25) DIPPER: This remarkable bird feeds while walking under water in clear streams where it finds aquatic insects. It winters even in the high arctic, moving to lower altitudes where there are streams that do not freeze. Is non-migratory.



26) WHEATEAR: A common nester above tree line in northern Alaska hill country. Not found in southern parts of America as it crosses Asia each fall to winter on the plains of Africa.



27) LAPLAND LONGSPUR: Also called the Alaska Longspur. The most common song bird of the Tundra. Winters south to California, Texas and Louisiana.



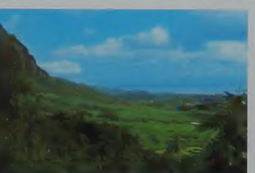
28) SNOW BUNTING: This small bird is the earliest spring migrant in the north, arriving long before the snow melts or other birds show up. A few winter in Alaska others south to the central U.S.



35) CITY WATERFRONT: Geese may once have nested here. Harbors are dangerous for water birds as there is apt to be oil on the water. There are no good resting or feeding places here. These areas will not support local or migrant birds unless refuges are provided nearby.



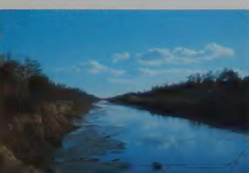
36) PRAIRIE POTHOLE: Many of our birds visit the prairies during migration. Important refuges are being established here to take the place of land drained for farms.



37) HAWAII: The islands of the mid-Pacific provide comfortable homes for birds during Alaska's long winter.



38) COASTAL MARSH: Most of our geese and many of our shorebirds nest close to the sea in marshes like this.



39) DRAINAGE PROJECT: The water is being drained from this area so people can use it for farming or building. Some birds will lose their home here.



40) TROPICS: This jungle area, where it is always hotter than it ever gets in Alaska, has many strange birds that never go north. There are some Alaskan birds here each winter too.



BIRD BANDS: A government license is required before a person may band birds. Returned bands provide information on migratory habits. The bands shown, 1 to 7, fit the Northern Phalarope, Green-winged Teal and Swan.



DUCK STAMP: American waterfowl hunters must buy a "Duck Stamp." This money is used to buy refuge lands to provide homes for waterfowl where natural wetlands have been destroyed. Alaskan birds benefit from this program.

PHOTO CREDITS
NATIONAL AUDUBON SOCIETY: Gerry Ahwell-22; Helen Cruickshank-418,19,25; Lola Beall Graham-40; R. F. Head-32; Max Hunt-39; Kai W. Kenyon-17,20; Dr. P. A. Johnson-9,10; George D. Lingo-31; Lawrence Lowery-33,38; Anthony Mercier-7; D. Morton-23,37; Charlie Ott-1,11,12,16,24,26,30,36; Leonard Lee Roe III-13,15,17,21,23,35; Leonard Lee Roe IV-4; Lynn M. Stone-6; Ron Willocks-13; T. H. Work-34.

PHOTO RESEARCHERS INC.: A. H. Rider-26; Nancy Simmerman-29.
CORNELL LABORATORY OF ORNITHOLOGY: J. Haugh-15; W. R. Spillford-27.

Chart originally conceived by Jim King. Map by Bob Hines.

PAM 598.2 (*49) AAS